

Claims

1. Customer care and billing system (1), especially for communication services, comprising:

5 At least one database (7) for storage and retrieval of data preferably formed as a server,
a plurality of clients communicating with the at least one database (7), and/or at least one application server with accompanying clients, the server communicating with the at least one database (7), and
an appropriate framework (10),
10 wherein relevant services corresponding to desired customer care or billing processes are offered to the system user,
characterised in that
the system (1) comprises a distributed component architecture
including components (5) attributed in correspondence to the relevant services
15 offered, wherein the components (5) are able to communicate with each other directly via interfaces.

2. Customer care and billing system (1) according to claim 1, characterised in that the system (1) is divided into at least two hierarchically arranged layers with increasing degree of abstraction wherein any lower layer isolates the above layer from
20 the lower layers so that details of implementations of the lower layers are hidden from the layers above.

3. Customer care and billing system (1) according to claim 1 or 2, characterised in that the system (1) is divided into at least two hierarchically arranged tiers corresponding to technical tasks wherein the combined elements of all tiers together
25 completely fulfill the tasks from the storage to the presentation of data.

4. Customer care and billing system (1) according to one of claims 1 to 3,
characterised in that the system (1) comprises a lowest base layer (40) containing
fundamental system behaviour.
5. Customer care and billing system (1) according to one of claims 1 to 4,
5 characterised in that the system (1) comprises a common layer (42) located above the
base layer (40) containing abstractions of classes of the base layer (40) and classes that
provide common facilities for all layers and tiers.
6. Customer care and billing system (1) according to one of claims 1 to 5,
characterised in that the system (1) comprises a technical services layer (44) located
10 above the common layer (42) providing software-related technical services.
7. Customer care and billing system (1) according to one of claims 1 to 6,
characterised in that the system (1) comprises an application layer (46) located above
the technical services layer (44) combining the services of the technical services layer
(44) in an abstract application and allowing mechanisms for description of the
15 elements of the domain tier (58) on a meta-level.
8. Customer care and billing system (1) according to one of claims 1 to 7,
characterised in that the system (1) comprises a business layer (50) located above the
application layer (46) containing the domain-specific classes for each component (5).
9. Customer care and billing system (1) according to one of claims 1 to 8,
20 characterised in that the system (1) comprises a presentation tier (52) implementing
the presentation of data and the feasibilities of application for the user of the system
(1).
10. Customer care and billing system (1) according to one of claims 1 to 9,
characterised in that the system (1) comprises an application tier (54) containing
25 classes and interfaces that represent the application.

11. Customer care and billing system (1) according to one of claims 1 to 12, characterised in that the system (1) comprises a meta-application tier (56) containing classes that provide facilities to an application to describe aspects of itself.
12. Customer care and billing system (1) according to one of claims 1 to 11, characterised in that the system (1) comprises a domain tier (58) containing business object classes of a specific application domain.
13. Customer care and billing system (1) according to one of claims 1 to 12, characterised in that the system (1) comprises a persistence tier (60) representing a reproduction of the class model of the domain tier (58) into the data model of the at least one database (7) and supporting mechanisms for transaction-protected manipulation of data in the at least one database (7).
14. Customer care and billing system (1) according to one of claims 1 to 13, characterised in that the system (1) comprises a meta-application dictionary containing information about one component (5), its classes and the attributes of these classes, and allowing the dynamic configuration of application information and processing on a meta-level.
15. Customer care and billing system (1) according to one of claims 1 to 14, characterised in that the system (1) comprises facilities (68) to make the server's interface model available on client side (70) and thus to hide the employed communication technology from a client developer.
16. Customer care and billing system (1) according to one of claims 1 to 15, characterised in that the system (1) provides defined interfaces and mechanisms for inquiry distribution, so that multiple application server of the same kind can be added to the system (1).

17. Customer care and billing system (1) according to one of claims 1 to 16,
characterised in that the system (1) provides the possibility of replacing or adding
components (5).
18. Customer care and billing system (1) according to one of claims 1 to 17,
5 characterised in that classes can be extended and/or new classes can be added to vary a
component during processing by using meta-application facilities.
19. Customer care and billing system (1) according to one of claims 1 to 18,
characterised in that the database (7) comprises a plurality of independent database
sections (12) and/or multiple independent databases (12) exist, wherein each of the
10 independent database sections and/or the independent databases (12) only
communicate with one component (5).
20. Customer care and billing system (1) according to one of claims 1 to 19,
characterised in that the system (1) provides mechanisms to allow transaction and
memory management distributed over components (5).

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